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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/115,589	07/15/1998	JENNIFER E. VAN EYK	12917	1553

26259 7590 10/04/2007

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EXAMINER	
BORGEEST, CHRISTINA M	
ART UNIT	PAPER NUMBER
1649	

NOTIFICATION DATE	DELIVERY MODE
10/04/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

poreilly@licataandtyrrell.com

Office Action Summary	Application No.	Applicant(s)
	09/115,589	VAN EYK ET AL.
	Examiner	Art Unit
	Christina Borgeest	1649

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *80-84,87-95,97,98 and 103-112* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *80-84,87-95,97,98 and 103-112* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Formal Matters

Claims 80 and 97 are amended. Claims 85-86, 96 and 99-102 are canceled. Claims 103-112 are new. Claims 80-84 and 87-95, 97-98 and 103-112 are under consideration.

Rejections Maintained

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of claims 80-84, 87-95, and 97-98 under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for while being enabling for a method of assessing skeletal muscle damage in a subject comprising detecting hypoxemia-induced skeletal troponin I (sTnI) peptide fragment with a molecular mass of 17 kDa and/or a 42 kDa covalent complex comprising sTnI with MAb C5 or a hypoxemia-induced skeletal troponin T (sTnT) peptide fragment with a molecular mass of 28 kDa with MAb JLT-12 (and antibodies disclosed in prior art as capable of binding sTnI and sTnT) in skeletal muscle (including the diaphragm) or alternatively assessing skeletal muscle damage in a subject comprising detecting hypoxemia-induced modified sTnI having a molecular mass of 66 kDa or 26 kDa in urine, does not reasonably provide enablement for the claims as broadly recited as set forth at pages 3-8 in the

previous Office action mailed 27 March 2007 is maintained in part. ***In addition, new claims 103-112 are hereby included in this rejection.***

First, Applicants have overcome some of the Examiner's concerns set forth in the previous rejection. For instance, Applicants' amendment of the independent claims to recite "antigen-specific fragment thereof" in lieu of "functional fragment of an antibody" overcomes the concerns set forth at p. 4, last 2 lines through p. 5, first 3 lines of the previous Office action mailed 27 March 2007. In addition, this amendment flows from p. 17, lines 24-28 of the specification as originally filed. Second, Applicants' amendment to incorporate the limitations of cancelled claim 96 into claims 80 and 97 overcomes the concerns outlined at p. 5, last 3 lines of the previous Office action mailed 27 March 2007.

The declaration under 37 CFR 1.132 filed 27 July 2007 is insufficient to overcome the remaining issues outlined in the rejection of claims 80-84, 87-95, 97-98 (and new claims 103-112) based upon 35 U.S.C. 112, first paragraph as set forth at pages 3-8 of the last Office action (mailed 27 March 2007) for the following reasons. First, regarding Figure 1A, Applicant mentions in the remarks that "the first blood sample on hospital admission is time 0", but there is no such indication in the Figure itself. Second, regarding the same Figure, Applicant mentions 5 patients, but it is not clear which one is which and/or which one is the control. Furthermore, although Applicants remarks state at p. 15, 1st paragraph that as many as 7 proteolytic fragments were observed for fsTnI, the Figures themselves show only one fsTnI or possibly two

fragments, which appear to be those that were indicated as enabled, so the evidence is not commensurate in scope with the claims. Furthermore, Figure 1B shows 6 samples instead of 5 and it is not clear what each sample corresponds to. Although Applicants statement that there is no relationship between the fragments and CK levels is reasonable, the Figures do not indicate what the lanes represent and if there is any control. For Fig 2, it is not clear what the different lanes represent (e.g., what are the 2 different lanes for day 1; four different lanes for day 2; 2 different lanes for day 3)? Finally, different antibodies were used than those disclosed and what was indicated as enabled. It is important to know whether those antibodies were publicly available at the time of the invention. Furthermore, are the antibodies specific for fragments of sTNI or sTNT as required by the claims? Furthermore, with respect to public availability of antibodies, see MPEP 2404.01:

> There are many factors that may be used as indicia that a biological material is known and readily available to the public. Relevant factors include commercial availability, references to the biological material in printed publications, declarations of accessibility by those working in the field, evidence of predictable isolation techniques, or an existing deposit made in accordance with these rules. Each factor alone may or may not be sufficient to demonstrate that the biological material is known and readily available. Those applicants that rely on evidence of accessibility other than a deposit take the risk that the patent may no longer be enforceable if the biological material necessary to satisfy the requirements of 35 U.S.C. 112 ceases to be accessible. The Office will accept commercial availability as evidence that a biological material is known and readily available only when the evidence is clear and convincing that the public has access to the material. See the final rule entitled "Deposit of Biological Materials for Patent Purposes," 54 FR 34864, 34875 (August 22, 1989).

To summarize, the rejection as set forth at pages 3-8 of the previous Office action (mailed 27 March 2007) is maintained. Briefly, although the specification and the post-filing date art by the inventors (Simpson et al. J Appl. Physiol. 2000 88: 753-760—submitted by Applicants with Applicants' arguments dated 15 September 2006) provides support for assessing hypoxemia induced muscle damage in skeletal muscle tissue (diaphragm) comprising an immunoblotting assay detecting the 17 kDa sTnI degradation production (peptide fragment) and 42 kDa covalent complex using MAb C5 and the 42 kDa covalent complex using MAb 31-35 (Figure 2) and the 27 kDa sTnT degradation product with MAb JLT-12 and the 66 kDa covalent complex using MAb 4D-11 (see Figure 3), (and modified sTnI in the urine, as shown in Figure 14) neither the specification and the literature teach the detection of other troponin fragments, thus the claims are not enabled for detection of any peptide fragment as broadly recited. This is extremely relevant because according to Simpson et al. (2000), the only degradation products of sTnI and sTnT that occur as a result of hypoxemia induced damage are the 17 kDa and the 27 kDa fragments, respectively.

Due to the large quantity of experimentation necessary to identify what antibodies can detect what fragments, the lack of direction/guidance presented in the specification and the absence of working examples directed to the same, the contradictory state of the prior art and the breadth of the claims which fail to recite limitations on the antibodies and fragments detected (for instance, it is not clear what sTnI or sTnT fragments are bound by the compound, however the evidence in the specification and the art shows that there are only two degradation products as a result

of hypoxemia-induced skeletal muscle damage), undue experimentation would be required of the skilled artisan to make and/or use the claimed invention in its full scope.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The provisional rejection of claims 80-84 and 92-98 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7, 16-18, 20-28, 31, 34-35 and 37-41 of copending Application No. 09/419,901 is maintained for reasons of record. In addition, new claims 103-112 are hereby included in this rejection.

Applicants argue at p. 16, 2nd paragraph that the claims of copending '901 application are drawn to detecting a myofilament protein modification product wherein at least one myofilament protein modification product is a chemical adduct of a myofilament protein.

This argument has been fully considered but is not found persuasive. The claims of the '901 application recite "evaluating for the presence of one or more different myofilament protein modification products in a biological sample, at least one of said myofilament protein modification products being a chemical adduct of a myofilament protein..." Although the claims are not identical, the recitation of "at least one...being a chemical adduct" does not preclude that some myofilament protein modification products might have no chemical adducts.

The provisional rejection of claims 80, 82, 83, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96 and 97 are on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 38, 39, 40, 41, 42, 43, 44, 45 and 46 of copending Application No. 11/138,184 is maintained for reasons of record. In addition, new claims 103-112 are hereby included in this rejection.

Applicants' comments regarding the fact that not Office action has been received for the '184 patent (which may eliminate any overlap in the claimed subject matter) or alternatively that Applicants may file a terminal disclaimer for the '184 patent is noted. In the intererim, however, the rejection is maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Borgeest whose telephone number is 571-272-4482. The examiner can normally be reached on 7:00am - 1:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on 571-272-0841. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christina Borgeest, Ph.D.

/Elizabeth C. Kemmerer/
Primary Examiner, Art Unit 1646